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Patent and Trademark Office

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/334,646	06/17/99	YAMAZAKI	S 0756-1984

MMC1/1211  
SIXBEY FRIEDMAN LEEDOM & FERGUSON PC  
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EXAMINER

HU.S

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 12/11/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
**09/334,646**

Applicant(s)  
**Yamazaki et al.**

Examiner  
**Shouxiang Hu**

Group Art Unit  
**2811**



☒ Responsive to communication(s) filed on Oct 15, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claim

☒ Claim(s) 1-3, 6, 8, 11-14, 16-19, 26-28, 32-34, 38-43, 48, 49, 52, 53, 58-60, 63, 65, and 71-75 is/are pending in the application. Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-3, 6, 8, 11-14, 16-19, 26-28, 32-34, 38-43, 48, 49, 52, 53, 58-60, 63, 65, and 71-75 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 6 and 13

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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### **DETAILED ACTION**

1. This application is a divisional one of U.S. Application No. 08/938,310, filed on September 26, 1997, now U.S. Patent 5,959,313, which itself is a divisional of U.S. Application No. 08/513,090, filed on August 9, 1995, now U.S. Patent 5,731,613.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6, 27, 28 and 74 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsueda (5,173,792).

Matsueda discloses an electro-optical active matrix type LC display device (Figs. 1-12), comprising: at least two TFTs ( 100A and 100B in Figs. 1-8) provided on the surface of an insulating layer (110); a common gate wire (102); a common source wire (Xm); a common drain wire (101), wherein the channel forming regions of the parallel-connected transistors are separately provided in at least two separate islands respectively.

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Regarding claims 27 and 28, it is noted that the display device of Matsueda presumedly inherently comprises a decoder and a display system as they are usually the basic parts in a workable display device.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) a patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsueda (5,173,792).

The disclosure of Matsueda is discussed as applied to claims 6, 27, 28 and 74 above.

Although Matsueda does not expressly disclose that the display device further comprises a memory, it is noted that it is well known in the art that it is desirable to have a memory in the device to further enhance the display performance (as evidenced in the prior art such as in Fig. 7 of Takemura (5,581,092)).

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a memory into the display device of Matsueda, so that enhanced display performance would be obtained.

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Claims 1-3, 8, 11-14, 16-19, 32-34, 38-43, 48, 49, 52, 53, 58-60, 63, 65, 71-73 and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takemura (5,581,092) in view of Matsueda (5,173,792).

Takemura discloses an electro-optical active matrix type LC display device (Figs. 1-8), comprising: a pixel matrix portion and a peripheral driver circuit portion (Fig. 7), wherein the peripheral driver circuit portion comprises an XY-branching circuit (XY DIVIDER), a decode circuit (X or Y DECODER), and a buffer circuit (MEMORY).

Takemura further discloses that the peripheral driver circuit portion comprises TFTs provided on the surface of an insulating layer; but, Takemura does not expressly disclose that the peripheral driver circuit portion comprises at least two TFTs connected in parallel. However, Matsueda, who's disclosure is discussed as applied to claims 6, 26-28 and 74 above, teaches that the reliability of a basic control element comprising two or more parallel-connected TFTs (Figs. 7-10) is better than that of a basic control element comprising a single TFT.

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the parallel-connected TFTs into the peripheral driver circuit of Takemura, so the reliability of the display device would be improved.

Regarding claims 38-43, 49, 52, 53, 58-60, 63 and 65, it is noted that it is well known in the art that the TFTs formed with monocrystalline silicon has much higher mobility than the TFTs formed with amorphous silicon; and, that the crystallization quality is strongly correlated

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with the Raman spectrum width ratio and intensity ratio (as evidenced in the prior art such as in Fig. 3 of Yamazaki et al. (5,608,232), which shows that the Raman spectrum width ratio of  $W/W_0$  is 2.0 or less; and, that the Raman spectrum intensity ratio of  $I/I_0$  is about 0.8 or more).

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the monocrystalline silicon into the display device of Takemura in view of Matsueda with the Raman spectrum width ratio of  $W/W_0$  being 2.0 or less and the Raman spectrum intensity ratio of  $I/I_0$  being about 0.8 or more, so that improved display device performance with high-mobility TFTs would be achieved.

#### *Response to Arguments*

4. Applicant's arguments with respect to claims 1-57 have been considered but are moot in view of the new ground(s) of rejection.

#### *Conclusion*

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 or 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to **Shouxiang Hu** whose telephone number is (703) 306-5729. The Examiner is in the Office generally between the hours of 8:00AM to 5:30PM (Eastern Standard Time) Tuesday through Friday.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is (703) 308-0956.

Shouxiang Hu

December 7, 2000

Tom Thomy